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BIG BANG INFLATION DEFLATES



SUMMER READING

**"HOW DO CREATIONISTS
EXPLAIN THESE FACTS?"**

***SEDIBA:
YET ANOTHER
PALEO-BLUNDER?***

Big Bang Inflation Officially Bites the Dust

Jeff Miller, Ph.D.

Article In Brief...

The pronouncement last year that proof of Big Bang inflation was discovered in the form of gravitational waves has now officially been retracted. The media and the cosmological community has, once again, proven themselves to be irresponsible and rash in their boisterous claims. Inflationary theory, fundamental to the Big Bang Theory, remains without evidence, making its adherents possessors of a blind faith.

THE RISE AND FALL OF BOGUS EVIDENCE

IN March of 2014, a wave of media attention was given to an announcement by cosmologists who gathered data at the South Pole using a special telescope (BICEP₂). The headlines were bold.

- “**Theory No More?** Scientists Make ‘Big Bang’ Breakthrough with Find” (2014, emp. added).
- “Space Ripples Reveal Big Bang’s **Smoking Gun**” (Overbye, 2014, emp. added).
- “Big Bang’s ‘Smoking Gun’ **Confirms** Early Universe’s Exponential Growth” (Vergano, 2014, emp. added).
- “Scientists Find Cosmic Ripples **from Birth of Universe**” (2014, emp. added).
- “First Wrinkles in Spacetime **Confirm Cosmic Inflation**”

(Cho and Bhattacharjee, 2014, p. 1296, emp. added).

- “The recent **discovery** of gravitational waves emerging from the Big Bang may point a way forward” (Afshordi, et al., 2014, p. 40, emp. added).
- “**Detecting** primordial gravitational waves is the closest thing to a proof of inflation that we are ever going to get” (Clark, 2014, p. 34, emp. added).

Apparently, inflation was proven. The facts were in. Empirical evidence for the beginning moments of the Big Bang had finally surfaced.

Under the Big Bang model, the Universe is theorized to be expanding outward from the point in space where the cosmic egg allegedly “exploded.” During the first moments after the Big Bang, Universal expansion occurred faster than the speed of

light, according to the theory, and this is known as inflation. However, no direct evidence has ever substantiated the claim that the Universe inflated in the violent way implied by the Theory—only circumstantial evidence. According to the model, gravitational waves would accompany the initial, rapid expansion immediately after the “bang,” but **no direct evidence has ever surfaced for their existence.** The new discovery was hailed as the “first direct evidence” of Universal inflation (“Theory No More?...,” 2014; “Scientists Find Cosmic Ripples...,” 2014; Landau, 2014).

Subsequently, we published an article responding to the claims (cf. Miller, 2014). In typical fashion, we highlighted the rashness of modern naturalists and the media, who make wild claims without adequate evidence. The announcements are loud, and the retractions tend to be soft. Sure enough, within three months, by June of 2014, the alleged findings were studied further, and the excitement of the celebration began to rapidly evaporate. *Nature* published an article titled, “Big Bang Finding Challenged,” arguing that the signal from the alleged gravitational waves

was too weak to be significant, studies suggest.... [T]he new analyses suggest that the twisting patterns in the CMB polarization could just as easily be accounted for by dust in the Milky Way.... [W]hen the dust is fully accounted for, the signal that can be attributed to gravitational waves **either vanishes or is greatly diminished** (Cowen, 2014, emp. added).

Theoretical physicist of New York University and the Institute for Advanced Study at Princeton, Raphael Flauger, examined the evidence and

concluded that “there’s **no evidence** for the detection of gravitational waves” (as quoted in Cowen, 2014, emp. added). Based on two independent analyses of the evidence, *Nature* concluded, “The astronomers who earlier this year announced that they had evidence of primordial gravitational waves **jumped the gun**” (Cowen, 2014, emp. added). In *Nature*, theoretical physicist and professor at Princeton Paul Steinhardt said that “serious flaws in the analysis have been revealed that transform the sure detection into no detection” (2014). In an October follow-up, *Nature* reported in an editorial titled “Dust to Dust,”

More than six months after the initial announcement that scientists had found evidence of gravitational waves—echoes of the Big Bang itself—the **claim is hanging by a thread**. Subsequent analysis showed that much of the signal could have been contaminated by **galactic dust**. The predictions of Nobel prizes for the team have faded. The champagne has gone flat. Extraordinary claims, as the saying almost goes, demand more scrutiny than usual to make sure they stand up (2014, emp. added).

The other major science news magazines gradually weighed in as well, distancing themselves from the claims made by the researchers. In June, *New Scientist* had conducted an interview with Andrei Linde, who is credited as one of the originators of cosmic inflationary theory. Linde said “they were a bit **over-optimistic**, and claiming the discovery of gravitational waves may have been **premature**” (as quoted in Schilling, 2014, emp. added), although he was quick to allege that the growing skepticism about the gravitational

waves discovery in no way disproves his theory of cosmic inflation. Then in October, 2014, *New Scientist* reported that the data results from the Planck telescope “suggest that dust could indeed account for the pattern BICEP₂ detected” (Slezak, 2014). The article, titled “The Rise and Fall of Cosmic Inflation,” stated, “Inflation is dead, long live inflation! The very results hailed this year as demonstrating a consequence of inflationary models of the universe... may now do the exact opposite. If the results can be trusted at all, **they seemingly suggest inflation is wrong**” (Slezak, emp. added). David Parkinson of the University of Queensland in Australia studied the waves to determine if they were the correct kind of waves to fit inflationary theory and discovered that they were not. “Contrary to what the BICEP₂ collaboration said initially, Parkinson’s analysis suggests that the BICEP₂ results, if legitimate, actually **rule out any reasonable form of inflationary theory**. ‘What inflation predicted was actually the reverse of

what we found,’ says Parkinson” (as quoted in Slezak, emp. added). Not good for the Big Bang Theory, which relies on inflation to fix the Horizon and Flatness problems inherent in naturalistic cosmological theories.

In September, *American Scientist* chimed in, reporting that

cosmologists say the much-heralded claim may have been **premature**. The findings, if true, would provide the **first direct observational evidence** for cosmic inflation, a theory that posits that the universe expanded exponentially during the first fractions of a second of its existence.... New observations indicate that the team may have underestimated polarization from relatively nearby dust in our galaxy. Some or all of the signal originally attributed to primordial gravitational waves **could be due to effects of local dust** (Burke, 2014, emp. added).

Also in September, *Science* ran an article titled “Evidence for Cosmic Inflation Wanes,” with the sub-title, “The biggest result in cosmology in a decade **fades into dust**” (Cho, 2014, emp. added). In the issue, Princeton

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cosmologist David Spergel said, “We’ve gone from ‘They can’t prove that it isn’t dust’ to ‘It’s probably dust’” (as quoted in Cho). Cosmologist at Johns Hopkins University in Baltimore, Maryland Charles Bennett, mercifully said, “They just got **overenthusiastic**, but it’s tough to know when you really have something” (as quoted in Cho, emp. added).

Nature, *New Scientist*, *American Scientist*, *Science*, and finally, *Scientific American* jumped into the fray, reporting in October concerning the alleged gravitational waves discovery that in the intervening months, the Planck satellite has reported new measurements that indicate the Milky Way may contain more dust than assumed by the BICEP₂ team. Several groups have...concluded that it is possible that dust could reproduce all (or most of) the claimed BICEP₂ polarization signal. Although these developments have dampened the exuberance of many in the physics community regarding the BICEP₂ result, the BICEP₂ team stands by its estimates—but it now admits that it **cannot rule out a dust explanation** (Krauss, 2014, p. 66, emp. added).

The printers were relatively silent over the next few months until late January, 2015, when *Nature* announced the official demise of the gravitational waves discovery under the title, “Gravitational Waves Discovery Now **Officially Dead**” (Cowen, 2015, emp. added). The team of astronomers that thought they had found the waves withdrew their claim, acknowledging that what they thought was gravitational waves from the Big Bang “**can be entirely attributed to dust** in the Milky Way rather than having a more ancient, cosmic origin” (Cowen, emp. added).

WHAT CAN BE LEARNED FROM THIS DEBACLE?

IT was fun while it lasted,” *New Scientist* reported in February (McKee, 2015), but what do we learn from the bumpy ride? At the risk of beating a dead horse, let us say yet again: the modern scientific (i.e., naturalistic) community and the liberal media are consistently rash in their claims to have found evidence for naturalistic theories, and sadly, the general populace is quick to believe whatever they say. By the time the retraction is made, the damage is done. Mainstream Americans, whose attention spans are shockingly short due to the many distractions in our lives, have already moved on, believing that the truth has been officially determined. Many times, the “truth” being proclaimed is contrary to the Bible. The result: more and more individuals distrust the Bible, when all the while, the story that instigated the disbelief was wrong in the first place.

Even the evolutionary scientific community has had to admit its rashness in this instance. In September, 2014, *Science* reported, “A beleaguered claim that appeared to reveal the workings of the big bang may instead say more about how science is done in an age of incessant news coverage” (Cho). *Science*, which was one of the first to announce the alleged discovery, proceeded to pass the blame to the researchers. “Some researchers say the BICEP team made its result seem much stronger than it was by announcing it in a press conference and a press release that proclaimed the ‘first direct evidence of cosmic inflation’” (Cho). The BICEP₂ team returned fire, arguing that they

“felt pressure from the media to stake a definite claim, [University of Minnesota, Twin Cities, cosmologist Clement] Pryke says: ‘They’re trying to translate this into something that the public can understand, and they want a yes or no’” (Cho). In line with what we have long argued, Steinhardt concurred: “The sudden reversal should make the scientific community contemplate the implications for the future of cosmology experimentation and theory” (2014). Chiding the irresponsibility of the scientific community and the media for their rashness in reporting the gravitational waves discovery, he admonished that next time,

announcements should be made after submission to journals and vetting by expert referees. If there must be a press conference, hopefully the scientific community and the media will demand that it is accompanied by a complete set of documents, including details of the systematic analysis and sufficient data to enable objective verification (2014).

We are not holding our breath that the scientific community will listen to his admonitions. First, it is critical that researchers and media gain attention for their discoveries or stories if they want to gain grant money, Nobel Prizes, or Pulitzers (and fame). And second, if solid, empirical evidence were required for every claim made by naturalists, the majority of evolutionary biological information would cease to exist, as well as all of Big Bang cosmology, modern paleo-anthropology, and uniformitarian geology. *Nature*, acknowledging the blunder by the media in how the supposed discovery was handled, but simultaneously claiming innocence, reported a meeting in October of

the Council for the Advancement of Science Writing, at which a panel of scientists and journalists would “search for ‘lessons learned by scientists and science writers involved with the BICEP₂’ story” (“Dust to Dust,” p. 274).

After citing the official retraction by the BICEP₂ team, *New Scientist* summarized the state of Big Bang inflation as it currently stands:

The discovery of the apparent gravitational waves was hailed as the “smoking gun” for a theory that the infant universe experienced an epic growth spurt known as inflation. Physicists popped corks in elation and dreamed of a Nobel prize. But 11 months later, this smoking gun has itself gone up in smoke, and researchers are nursing a hangover. “We are pretty much back to where we were before,” says Alan Guth of the Massachusetts Institute of Technology, who proposed the theory of inflation in 1981 (McKee, 2015).

So where were we before?

In the midst of the fray in 2014, Paul Steinhardt, “who helped develop inflationary theory but is now a scathing critic of it” (Slezak), wrote a stinging critique of inflation and its alleged evidence from the gravitational waves. He argued that “[p]remature hype over gravitational waves highlights gaping holes in models for the origins and evolution of the Universe” (Steinhardt, 2014). He said,

The BICEP₂ incident has also revealed a truth about inflationary theory. The common view is that it is a highly predictive theory. If that was the case and the detection of gravitational waves was the “smoking gun” proof of inflation, **one would think that non-detection means that the**

theory fails. Such is the nature of normal science. Yet some proponents of inflation who celebrated the BICEP₂ announcement already insist that the theory is equally valid whether or not gravitational waves are detected. How is this possible? The answer given by proponents is alarming: the inflationary paradigm is so flexible that it is **immune to experimental and observational tests....** [T]he paradigm of inflation is **unfalsifiable....** [I]t is clear that the inflationary paradigm is **fundamentally untestable, and hence scientifically meaningless** (2014, emp. added).

And that, folks, is the state of inflationary theory—and, we might add, the Big Bang Theory, upon which it rests.

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signs of disease. If so, they are not representative of the species” (p. 11). That would mean that the *sediba* fossils cannot even be used as evidence of a transitional species, since the normal anatomy of the species would remain unknown.

The fossil record should be filled with billions of transitional fossils if Darwinian evolution actually occurred, but as we have highlighted time and again—and even many of the evolutionists themselves frequently admit—the evidence for the evolution of humans from an ape-like ancestor is lacking. The fossil record continues to support what creationists predict to be the case if the biblical model is true. God created the original “kinds” (Genesis 1:21,24-25) of creatures, and only diversification **within those kinds** has occurred over time. Believing that we evolved from a single-celled organism billions of years ago amounts to a wild, irrational leap.

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SINCE their discovery in 2008, we have been responding to the waves of media hype over the *Australopithecus sediba* fossils—claimed to be pieces of two individuals thought to be representative of the missing link between the Australopithecines and the *Homo* genus (cf. Butt, 2010; Miller, 2012a; Miller, 2012b). The media proclaimed the fossils to be evolutionary “game changers” (Potter, 2011), the “first of our kind” (Wong, 2012), and “strong confirmation of evolutionary theory” (Potter). As we predicted, enough time has now gone by for further study to be done on the fossils, and the hoopla over the find seems to have all but disappeared.

In fact, once again, a complete 180 degree turnaround is underway. An article appearing in *New Scientist* in 2014 started with the sentence, “One of our closest long-lost relatives may never have existed. The fossils of *Australopithecus sediba*, which promised to rewrite the story of human evolution, may actually be the remains of two species jumbled together” (Barras, 2014). Ella Been of Tel Aviv University in Israel studies the spines of ancient hominins and ran across a paper in *Science* magazine that assessed the spine of *sediba*. After conducting her own study, Yoel Rak (also of Tel Aviv) and she “conclude that there are not two but four individuals” represented by the *sediba* fossils—separate individuals whose bones were mixed up during the (catastrophic) event that began the fossilization process (Barras). They presented their study at a meeting

of the Paleoanthropology Society in Calgary, Canada in April, 2014. This revelation, once again, highlights how easy it is for evolutionists to be wrong in their conclusions about fossils, especially considering that their conclusions are based on “meager evidence” (Wong, p. 31), like a “toe bone here or a jaw there” (DiChristina, 2012, p. 4).

Recall from our last article addressing *sediba* that Lee Berger, the evolutionary paleoanthropologist of the University of Witwatersrand in South Africa who discovered the *sediba* fossils, chided the standard practice in the paleontological community of trying to draw too much information from single, isolated bones. The *sediba* skeletons were thought to be more complete than typical fossil finds (even though the *sediba* skeletons were nowhere near being even 50% complete). Berger argued that if any of the bones he found had been found isolated, as is the typical scenario in fossil finds, completely different conclusions would have been drawn about the skeletal anatomy. He said, “*Sediba* shows that one can no longer assign isolated bones to a genus” (as quoted in Wong, p. 34). Ironically, now even his discovery, which was thought to be more complete, has also apparently been shown to be inadequate in determining the anatomy of an ancient skeleton. His assessment appears to have fallen victim to the same erroneous practice in paleontology that he chided. To make matters worse, according to the *New Scientist* article, “Berger’s latest work hints that the young male’s vertebrae may show

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Q&A: How Do Creationists Explain These Facts?



"Humans Have Genes for Egg Yolks and Tails"

"Whales have Genes for Legs"

"Birds Have Genes for Conical Teeth"

Joe Deweese, Ph.D.

Article In Brief...

Question lists such as these can seem like rock-solid confirmation of evolutionary processes and common descent. However, by examining the facts themselves, rather than the evolutionary interpretations, we find that none of these examples provides solid evidence for evolution by common descent. While analyses may require technical knowledge and understanding, it is imperative that we assess the validity of such claims from a detailed scientific perspective in order to provide a reasoned, scientifically appropriate response.

THIS series of claims appears to offer irrefutable evidence in favor of evolution by common descent and has been often repeated on blogs and news Web sites. The premise of these claims is that if all life evolved from a common ancestor, there should be genetic remnants of our evolutionary past still present in the genomes of all organisms. Initially, these claims may sound insurmountable as evidence for our supposed evolutionary ancestry. However, several important points need to be made to clarify this "evidence." Further, **these alleged evidences are easily explained and do not support common descent.**

Before addressing the claims, a few points need to be made regarding

terminology. First, these claims use the term "genes" without clarifying exactly what is meant, which is very common in popular media. The term gene was coined by a Danish biologist named Wilhelm Johannsen over 100 years ago to describe the units of inheritance identified in Gregor Mendel's research ("1909: The Word Gene Coined," 2013). While this was a convenient way to describe these "units of inheritance," our understanding of these factors has expanded dramatically in recent years. The idea that a single gene controls a specific trait or feature is generally an oversimplification. In other words, a visible trait (known as a "phenotype") is the product of a series of genetic factors (known as the "genotype").

For example, eye color in humans results from the combination of specific versions (called alleles) of at least two different genes. More modern definitions have linked the idea of a gene to a sequence of DNA that is used to produce a protein. However, even this fails to capture the full idea of what a gene is since a number of DNA sequences are functional (and influence phenotype) without producing a protein product.

Applying this understanding to the claims being addressed above, it should be noted that the use of the word "gene" is misleading at best. The "genes" in some of the above questions are actually part of the sophisticated network of protein-coding and non-protein coding genes involved in body plan development (i.e., that control the development of structures and physical features while an organism is developing). These genes participate in

A "gene" generally refers to a sequence of DNA that contains the information that is transcribed into RNA and translated into a protein product. This DNA ► RNA ► protein process is known as the "Central Dogma" of molecular biology. While this concept is true, it is an oversimplification and there is now known to be many more ways that DNA and RNA are used. So, protein production is not the only goal of DNA. For example, there are many non-protein coding genes that make functional RNA products. Further, many RNA molecules serve gene regulatory roles often by controlling how protein-coding genes are used and when they are expressed (i.e., used to make a protein).

an impressively well-orchestrated ballet that controls the location of body structures in embryos during development. So, there really aren't specific "genes for legs" or "genes for tails." Instead, alteration of the temporal and spatial presence of the

protein products of development-regulating genes will alter the physical structures of a developing embryo.

Second, genes involved in body plan development are important to multicellular organisms, and there are several genes involved in development that have homologous (similar) genes that are present in very diverse sets of organisms. For example, the homeobox or HOX genes are a family of genes that are found in a wide array of organisms. These genes are involved in body plan development and slight changes to these genes can have extreme consequences on the structure and viability of an organism (McGinnis and Krumlauf, 1992, pp. 283-302; Mallo, et al., 2010, pp. 7-15). The tight regulation of HOX genes is evident from experimental results showing that mutations in HOX can alter body plan and neural development and even cause cancer (Philippidou and Dasen, 2013, pp. 12-34; Quinonez and Innis, 2014, pp. 4-15). This function underscores the fact that these genes are critical and must be precisely regulated in order for body plans to develop properly. While mutations in HOX genes can lead to extra limbs or other features, the additional features often are non-functional and are usually detrimental to the organism.

Third, HOX genes and other genes involved in development are often hailed as evidence of evolution by common descent. This is because HOX homologs are found in many different organisms, which is interpreted as evidence that these genes arose during evolution and passed from one life form to the next. However, it is proposed that some genes (including genes involved in growth and development) evolved indepen-

Homologous proteins are those that have similar structure (resulting from similar DNA/protein sequence) and function. The evolutionary assumption is that homologous features—including structures, proteins, etc.—are the result of evolution by common descent. However, homology does not necessarily imply common ancestry. Instead, we would argue from a biblical model these are excellent examples of common design features that were created to accomplish common functions.

dently multiple times (Irimia and Garcia-Fernandez, 2008, pp. 1521-1525). In other words, some homologous genes present in unrelated organisms arose independently, rather than from a common ancestor. According to this interpretation, evolution solved some of the same problems several times (i.e., in different lineages, independently). Rather than suggesting that these genetic discordances are evidence of common design, the concept of convergent evolution was invented to “explain away” these coincidences (Bergman, 2001, pp. 26-33). While convergent evolution is a convenient concept, it does not explain how

these genes or sets of genes evolved once, let alone multiple times independently (Meyer, 2013).

So, what should we make of these claims? Let us examine each one briefly to understand what the claims are and what the evidence is. First, do whales have “genes for legs”? While whales have developmental genes just like other mammals, they do not have specific “genes for legs.” In fact, the only reason that “legs” are even mentioned is because of the presumed evolutionary ancestry of whales. In other words, why not call these “genes for extra fins/flippers”? Further, it should be noted that there are a few extreme cases that have been documented in whales where bones around the pelvic region have been expanded and/or additional bones are present (Andrews, 1921, pp. 1-6). Contrary to some claims, the pelvic region in whales is not a vestigial structure. Rather, the bones in this region anchor the reproductive organs (Wieland, 1998, pp. 10-13; Dines, et al., 2014, pp. 3296-3306). Cases of “growths” or extra bones, while interesting, do not mean that

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whales once had legs. Is it possible that these occurrences are within the natural genetic variation of organisms? Take for example, the more recent story of a dolphin with a second set of fins (Wieland, 2006). Perhaps this is an example of our lack of understanding of the natural genetic variation found within these creatures? Again, the only reason that these structures are claimed to be “legs” is because of the evolutionary interpretation placed on top of the data. The fact that these anomalies exist does not negate Creation in any way. Rather than supporting common descent, these examples of variations and mutations really suggest a common design, including common developmental circuits built into the genomes of organisms (Ham, 2006; Sarfati, 2014).

Second, humans do not have genes for tails. This claim arises from the presumption that we evolved from ape-like ancestors and is based on two observations. First, there are newborns that have fatty tissue appendages on the rear of the child, which may appear tail-like. However, these appendages do not display characteristics of a tail in structure or function (Lamb, 2007). Further, these incidences are clearly the result of mutation—breaking gene function rather than developing something new. The second source of this claim comes from the appearance of a developing human embryo. During embryonic development, it may **appear** like humans have a tail, but this actually develops into the spinal column and coccyx. The coccyx is no longer considered a vestigial organ (Bergman and Howe, 1990, p. xii). So, there never is a “tail” even as an embryo. But what of the cases of extra bones beyond the coccyx?

There are some documented cases of this, but this only supports the idea that there is variation among humans and not that humans have leftover “tail genes.” [For a more detailed discussion of “human tails,” see a series of articles by Casey Luskin (2014).] Further, there are numerous examples of anatomical variation among humans including cervical ribs, extra fingers or toes, absent muscles, and even differences in the branching pattern of the aorta (Moore, et al., 2014). Each of these examples suggest that anatomical variation is normal and highlights the differences in development that result from an individual’s unique genetic make-up.

Third, regarding humans having the genes for egg yolk, this claim is weak at best. The claim originates from a single published report suggesting that humans have remnants of a gene used to make a protein found in egg yolk (Brawand, et al., 2008, p. e63). When the data is examined, the “remnants” are a few very short sequence segments—most of which contain multiple mutations when compared to the sequences found in chickens [see supporting information in (Brawand, et al.)]. Unlike the claim that “humans have genes for egg yolks,” we in fact have a few short sequences (sequences represent portions of two to three exons out of 35 exons in the *VIT1* gene) which poorly correspond to fragments of the rather large genes for these proteins. In fact, I would suggest that these sequence correspondences really are not remnants at all. Some of the sequences in question are actually part of other human genes. So, instead of being remnant sequences, these are more likely coincidental sequence similarities.

Fourth, the claim that birds have genes for teeth likely centers around a 2006 study of a mutation in chickens called *talpid²*, which is a lethal recessive mutation that causes several developmental defects in chick embryos (Harris, et al., 2006, pp. 371-377). This mutation has been studied for over 60 years, and the 2006 study suggested that embryos with this mutation appeared to be developing a tooth-like structure before death (Harris, et al.). Evolutionary interpretations of these findings suggest that this mutation must indicate that there is some vestigial genetic programming for tooth development leftover in the genomes of chickens (“Mutant Chickens Grow Teeth,” 2006). But important points need to be made regarding those interpretations. First, the *talpid²* mutation is known to impact the developmental gene called *sonic hedgehog (shh)*, which plays critical roles in body plan patterning and development. Thus, it is no surprise that this mutation may cause drastic changes in body structure. Second, this mutation is lethal; so, clearly, it does not offer any benefit for the organism. Third, at the time of the 2006 study, the actual gene involved in this mutation was unknown. However, that gene has now been identified as *C2CD3* (Chang, et al., 2014, pp. 3003-3012). This study noted that the actual function of the protein produced from this gene is not known, but they provided evidence that a deletion within this gene caused the *talpid²* phenotype (Chang, et al.). Interestingly, this gene is somehow involved in production of cilia and the protein product is detectable in cells. Thus, far from being a “gene for teeth,” this gene appears to be

important in embryonic development and somehow plays a role in cilia formation. Certainly, more details will be forthcoming as research continues, but **this example** does not support the idea that “birds have genes for teeth.” That said, it should be noted that there are examples of birds with teeth (e.g., Archaeopteryx; also, there is an egg tooth that is used to break out of eggs). So, we would not be surprised to find other birds with the genetic information to produce such structures, but the existence of those abilities in no way implies that birds evolved from animals with teeth. Further, it is also possible that there may be birds that have lost the ability to produce teeth through genetic mutation, but again, the *talpid*² mutation does not appear to be such a case.

CONCLUSION

It is very important that we carefully examine the scientific evidence behind common claims that purport to show irrefutable evidence for evolution. An examination of the actual data shows that the evidence is not what it claims to be. It is important, however, that creationists also not oversimplify complex data. The details of science often make a big difference in interpretation of the data, as is seen with the *talpid*² mutation example.

From a biblical worldview perspective, none of the above “evidences” are at odds with a Creation model. In fact, the presence of mutations and variation is consistent with the genetic degeneration anticipated in the modern concept of the Creation model (Sanford, 2008). Living on Earth after the Fall, with many generations of mutations already present in the genomes of organisms around

the world, we must recognize that genetic degeneration continues to remind us of both the consequences of the Fall and the hope we have in Christ our Redeemer Who will clothe us with a new body (Philippians 3:21).

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NOTE FROM

The Editor



Summer Reading: ABR

Summer is a time when children have lots of free time on their hands. Parents scurry to keep them busy with as many productive activities as possible.

We at Apologetics Press can help. In addition to our wealth of rich reading materials for young people, we offer the Advanced Bible Reader (ABR) section of our Web site. This electronic tool encourages young people ages 5-13 to read the Bible, and various other materials about God, and then to take tests and get points and awards for their work. It functions like the accelerated reader programs in public schools—but it uses the Bible.

Since the Word of God is living and powerful, and since it is a lamp to our feet and a light to our path, it is imperative that our children become acquainted with God's Word early in order to understand His will for their lives. There is no substitute for reading God's Word and learning what it means. The ABR program will aid young people in their study by offering them a unique learning experience. The program is free of charge and has been designed simply for the purpose of offering an incentive to encourage Bible reading and the reading of Bible-related material. It is open to all who would like to become students, but



is designed primarily for those in kindergarten through the sixth grade.

The program is designed so that young readers can create an account,

have their own username and password, and begin taking ABR tests. Parents and teachers can create a teacher account to monitor children's progress and award certificates as they are earned. Each test is worth a designated amount of points. The amount of points that a student earns on each test will accrue in the student's point total. The students will be able easily to keep track of their points, which tests they have taken, and what questions they answered correctly or incorrectly.

Allow me to encourage you to visit the site, browse its contents, and then begin using ABR to facilitate the further spiritual development of your children. Go to the A.P. Web site and click on "Advan. Bible Reader" in the left-hand column.

Dave Miller

**See the Center Spread
for More Details**